CLAIMS

What is claimed:

1. A video image motion estimation apparatus including a processing element block for receiving a reference data and a current data to obtain a motion vector in which a sum of absolute difference between the two input values is minimized, and a comparator, comprising:

a down sampling means for down-sampling said reference data and said current data, and

a memory for respectively storing said down-sampled reference data and current data and then providing said data to said processing element block.

2. The motion estimation apparatus according to claim 1, wherein said down sampling means performs a down sampling operation by 2:1 by selecting only lower n/2 bits among n (a multiple of 2) bit input data.

3. The motion estimation apparatus according to claim 1, wherein a means for down-sampling said reference data and a means for down-sampling a current data are individually separated.

4. The motion estimation apparatus according to claim 1, wherein said memory includes an even column memory for storing an even column of said reference data, an odd column memory for storing an odd column of said reference data and a current memory for storing said current data,

the motion estimation apparatus further includes a demultiplexer for separating the even column and the odd column of the down-sampled reference data are separated and for then providing the even and odd columns to the memory.

5. A video image motion estimation apparatus including a processing element block for receiving a reference data and a current data to obtain a motion vector in which a sum of absolute difference between the two input values is minimized, and a comparator, comprising:

a demultiplexer for separating an even column and an odd column of said reference data,

an even column memory for storing an even column of said reference data and then providing the even column to said processing element block,

an odd column memory for storing an odd column of said reference data and then providing the odd column to said processing element block, and

a current memory for storing said current data and then providing the current data to said processing element block.

6. The motion estimation apparatus according to claim 5, wherein said even column memory and said odd column memory each are divided into n number of column blocks (n is a natural number of over 2), a reference data of 1/n are sequentially written into each of said column blocks per motion estimation, wherein the reference data in the column block firstly written is updated with a new data, and the reference data stored in each of the column blocks in the memory are sequentially read and then provided to the processing element block.

7. A video image motion estimation method in a motion estimation apparatus including a processing element block for receiving a reference data and a current data to obtain a motion vector in which a sum of absolute difference between the two input values is minimized, and a comparator, comprising:

a down sampling step of down-sampling said reference data and said current data, and

a memory step of respectively storing said down-sampled reference data and current data and then providing said data to said processing element block.

8. The video image motion estimation method according to claim 7, wherein said down sampling step performs a down sampling operation by 2:1 by selecting only lower n/2 bits among n (a multiple of 2) bit input data.

9. The video image motion estimation method according to claim 7, wherein the down sampling of said reference data and the down sampling of said current data are individually performed.

10. The video image motion estimation method according to claim 7, wherein said memory step individually stores even columns and odd columns of said reference data, and said current data and wherein the method further includes a demultiplexing step of separating said down-sampled reference data into even columns and odd columns.

11. A video image motion estimation method in a motion estimation apparatus including a processing element block for receiving a reference data and a current data to obtain a motion vector in which a sum of absolute difference between the two input values is minimized, and a comparator, comprising:

a demultiplexing step of separating an even column and an odd column of said reference data, and

a memory step of individually storing even columns and odd columns of said reference data and said current data and then providing them to said processing element block.

12. The video image motion estimation method according to claim 11, wherein said memory step of storing even columns and odd columns divides each of memory for storing even column and odd column reference data into n number of column blocks (n is a natural number of over 2) and sequentially writes a reference data of 1/n per a motion estimation into each of said column blocks, wherein the reference data stored in each of the column blocks in said memory is sequentially read and then provided to said processing element block.